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МОВЛЕННЯ ВИКЛАДАЧА УНІВЕРСИТЕТУ ЯК ВАЖЛИВИЙ КОМПОНЕНТ ПЕДАГОГІЧНОЇ МАЙСТЕРНОСТІ

Висвітлено особливості мовлення викладача університету як одного з важливих компонентів педагогічної майстерності. Розглянуто мовлення як інструмент професійної діяльності педагога, за допомогою якого можна розв'язати різні педагогічні завдання, зробити складну тему цікавою, а процес її вивчення – привабливим, створити щиру атмосферу спілкування, встановити контакт із студентами, досягти взаєморозуміння з ними. Мовлення вчителя має бути пристосоване для розв'язання специфічних завдань, що виникають у педагогічній діяльності, спілкуванні. Проаналізовано основні шляхи досягнення високої якості професійно-педагогічного мовлення викладача та професійні особливості мовленнєвої діяльності педагога, а саме керівництво мовленням залежно від умов педагогічного спілкування, такий кінцевий результат мовлення як досягнення гуманістично спрямованої мети, добір мовних і мовленнєвих засобів залежно від потреб, завдань взаємодії викладача та студентів; конструювання мовленнєвої діяльності педагога в реальній ситуації спілкування на основі рефлексії стану, поведінки, реакції студентів. Висвітлено функції мовлення викладача (комунікативна, психологічна, пізнавальна, організаційна).

Встановлено, що професійне спілкування з аудиторією має приводити до конкретних позитивних результатів, що може бути досягнуто завдяки використанню знань з техніки мовлення, тому проаналізовано такі складові техніки мовлення як дихання, голос, дикція, інтонація, темп.

Розглянуто мовлення викладача як предмет його педагогічного аналізу й самоаналізу, постійного самовдосконалення. Доведено, що успіх професійної діяльності викладача залежить від техніки мовлення, що включає вміння правильно дихати, інтонувати виступ та робити паузи, чітку дикцію та тембр мовлення. Після об'єктивної оцінки власних мовленнєвих даних варто розпочати регулярні заняття для виправлення виявлених недоліків, слабких сторін мовлення (тренувати дихання, відпрацьовувати дикцію, темпоритм, зміцнювати голосові зв'язки). Систематична робота над собою та виконання спеціальних вправ сприятимуть вдосконаленню техніки мовлення.

Ключові слова: викладач, університет, мовлення, педагогічна майстерність.

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DEVELOPMENT OF THEORY AND PRACTICE OF LABORATOR LESSONS IN HIGHER SCHOOL BY A. D. BONDAR

The article analyzes the contribution of the professor of the Department of Pedagogy of Taras Shevchenko National University of Kyiv A.D. Bondar in the development of theoretical principles and methods of conducting laboratory and practical classes in higher education, identifies the possibility of using this pedagogical experience in modern conditions.

It is established that today the work and pedagogical activity of A.D. Bondar is insufficiently studied, although his work reflects the results of research on important didactic problems that are relevant today. It is analyzed that among the various types of classes in higher education an important place belongs to laboratory and practical work, because they follow one of the leading principles of didactics – the principle of connection of theory with practice. According to A.D. Bondar, laboratory and practical works are closely connected with lectures and independent work of students, they, with their proper organization, help students to creatively use the theoretical knowledge that they acquired during lectures and in the process of studying literary sources. This type of training activates the cognitive activity of students, gives them the opportunity to show initiative and ingenuity, better master the program material, get acquainted with the latest installations and devices, equipment and materials, experiment in laboratory or production conditions, helps teachers to involve students in research work, promotes the development of their thinking, ingenuity, innovation. According to A.D. Bondar, laboratory classes are an effective way to study the material, give students the opportunity to apply their knowledge in practice and see the results of their work. At the same time, many factors significantly reduce the effectiveness of this important type of training. It is proved that the improvement of the quality of laboratory classes can help, in particular, the implementation of guidelines developed by A.D. Bondar almost half a century ago.

Keywords: laboratory, practical training, forms of organization of training, types of training, A.D. Bondar.

Formulation of the problem. As mentioned in our previous publications[7,8], in our opinion, the 60s-80s of the last century were one of the most effective periods in the activity of the Department of Pedagogy of Taras Shevchenko University of Kyiv. The lead direction of activity of department at the specified time, was the pedagogisation of educational process. Doctor of pedagogical sciences, Professor Andrey Danilovich Bondar (1913–1983) took an active part in this work. As an associate professor A.D.Bondar worked at the department since 1963, as a professor – since 1970. One of the lead areas of its diverse research and educational activities was high school education, in particular, didactics of higher school. It was not by chance that he was instructed to lead the section of pedagogy of higher education at the department. In our previous academic explorations on the academic and pedagogical heritage of A.D. Bondar [7,8] was analyzed his contribution to the development of theoretical and methodological bases of pedagogical practice of students, theory and methods of seminar classes conduction in high school.

The purpose of this article is determining the contribution of Prof. A.D. Bondar in developing theories and methods of most importantly (especially for science students) types of education classes in high school as a laboratory and a practical classes and topicality of his recommendations for modern higher education in Ukraine.

Presenting main material. The urgency of the study of this problem in the historical and pedagogical aspect is due to the need to significantly improve the effectiveness of training of future pedagogical staff in accordance with the requirements of the Concept of development of higher pedagogical education in Ukraine, in particular the content, forms of organization of methods and teaching aids. Well-known Ukrainian academician in the field of didactics of high school A.D. Bondar devoted much of his life to the solution of these problems. Unfortunately, up to date, the works and educational activities of A.D. Bondar were insufficiently studied, although the of works A.D.Bondar show the results of the study of important didactic problem, which is topical today [4]. By education A.D. Bondar was a representative of the natural sciences, which is why he was extremely interested in the problem of improving the practical training of future specialists – he devoted a textbook on teaching practice (1972) to the analysis of these problems, and in 1977 at the publishing house "Higher School" (Teacher library) a book of A.D. Bondar (with L.A. Ranska as a co-

author) was published in the amount of 1,000 copies "Laboratory and practical work in higher education" [3], written by studying and analyzing the literature, experience and high school teachers pedagogical research in a systematic form presents the theoretical and practical aspects of the preparation and conduct of laboratory and practical work in higher education.

The first section of the book deals with the place of laboratory and practical work in the educational process of higher education. Among the various types of classes in high school importance lies in the laboratory and practical work, so that through them shall comply one of the leading didactic principles – the principle of communication of theory and practice.

High School has always been designed to give future specialists deep and strong theoretical knowledge of the science that they study. But under current conditions except this it should teach students to creatively apply this knowledge in practical purposes, in life, at work. That's what promote laboratory and practical work, performing with students during word in science department. This work is provided by the curriculum and on the natural faculties have a prominent place, such as in times A.D.Bondar, the chemical faculty it was 37% of the time, at radiophysics – 44% of teaching hours were occupied by laboratory studies [3, p. 7].

According to modern students, unfortunately, almost half of the study time is devoted to lectures that gave very deep knowledge, but not supported by real practice. Unfortunately, today, not only some students, but not all teachers of higher education institutions, during laboratory classes, realize the full power of this organizational form and realize it in full, giving the opportunity to develop students' creative and research skills. Such a state of affairs leads to lower than expected quality of laboratory work, a decrease in the quality of experimental preparation of students. Considering the modern curricula of the natural sciences, we can conclude that the share of hours devoted to laboratory work has significantly decreased and is only about 10-15%.

Laboratory and practical work, in the opinion of A.D.Bondar, is closely related to the lectures and independent work of students, they are, in their proper organization helping students with creative use in practice that theoretical knowledge they gained in class and in the process of studying literary sources. This type of training sessions activates cognitive activity of students, giving them the possibility to detect the initiative and creativity, deeper understand program material. It enables students to get acquainted with the latest facilities and appliances, equipment and materials, with the experiment at the laboratory or at production conditions, helps teachers engage students to research, promotes the development of their thinking, creativity, rationalization.

As A.D.Bondar states, in teaching science there are different views on differentiation of laboratory and practical work, some scientists admit, that laboratory work is always closely linked to the laboratory, and practical – not always; others say that every laboratory work is conducted by the students in practice, which means that it can be viewed as practical. Therefore, it is difficult to draw a clear distinction between laboratory and practical work. The term "practical work" is often regarded by some authors as synonymous with the term "laboratory work." However, according to A.D.Bondar, the difference between laboratory and practical work exists and is manifested in the fact that laboratory work is performed by students in an appropriate framework that is determined by the written instructions. Laboratory work is this active form of independent work of students, where their activity is combined mental and motor actions aimed at active application of acquired knowledge and skills in practice according to the given program (instructions) corresponding to equipment and venue. Practical work includes students performing complex technical or research problems associated usually with creation of simple devices, visual aids and models that are then used in an educational process, the practical solution of the extracted knowledge and skills. Practical work can be carried out in various conditions: office, laboratory, in the workshop and on the ground (as for history, the excavation of ancient villages, geography, geology, botany, etc.). Cognitive activity of students in the practical work differs from analogous logical activity in laboratory work. The immediate aim of practical work, except learning the term, is to solve specific practical problems using acquired knowledge and skills. This is their main difference from laboratory work [3, p.9]. The peculiarity of practical work is that tasks of the students are usually problematic. The student should independently cope with such work, choose to perform the necessary settings, devices and materials.

The main tasks of the laboratory and practical work as a type of training in higher education, according to A.D. Bondar, are:

1. To combine into a whole lecture classes with systematic form of independent work of students with handbook and other sources.
2. To promote the formation of scientific worldview of the students.
3. To teach students to creatively apply theoretical knowledge in practice, to work with installations, devices, tools, materials.
4. To develop students' cognitive and design skills, observation, attention, endurance, imagination and other qualities.
5. Arouse students' interest in scientific and experimental activities and include them in research work carried out at departments, laboratories, etc.
6. To systematically control the knowledge, skills and challenges of students with separate topics or sections of the course you are studying [3, p. 11-13].

The survey students about the role of practical and laboratory work conducted at the time of prof. A.D.Bondar, shows that a number of students praised these types of classes in the formation of competent professionals with higher education: "Laboratory and practical work are extremely important forms of education, because they allow you to test your knowledge in practice. We do not imagine going to college without laboratory and practical work. Here you have captured all the work: you form, check, observe, experiment. There should be more such work in the study of all disciplines." "Students love laboratory and practical work for their novelty and creative thinking. During these works, the student checks for what they know and what they can do. And if something fails, they can learn this themselves or with the help of a teacher. In life, this will always come in handy. Of course, not everything is given immediately. Sometimes it can be difficult, especially when the work is difficult. But we are learning to do everything right before graduation" [3, p.14].

One of the criteria of quality conducted laboratory or practical classes is the level of its planning. The following section of the book by A.D. Bondar is devoted to the guidelines for the effective planning of laboratory and practical work.

As it is well known, academic organization of educational process includes a number of organizational and methodological measures directed to achieve high quality specialist with higher education. This factor, according A.D.Bondar, is rational planning, which includes the development plans and programs, arrangement of academic pedagogic personnel, scheduling sessions,

planning educational work of teachers and self-work of students and others.

The experience of science department indicates that laboratory and practical classes can be planned either in parallel with the course of lectures, or as the final stage of its study. In the first variant of planning, part of the laboratory and practical work is done with some advance of the lecture course, if the work is done in the form of workshop, i.e. students perform all the work individually or in teams. To achieve simultaneousness of first lectures and workshops is possible only in frontal method of their conduction and reduction of the gap between theory and practice can only be achieved by the formulation of so-called work cycles.

It is believed that as the simple consolidation of knowledge at workshops on methodological point of view does not justify itself, to achieve the goal the students should be put in conditions that require hard mental activity, initiative and creativity. Therefore, you should practice to conduct complex operations based on several sections of the course.

A.D.Bondar believed that success in carrying out one or another laboratory or practical work largely depends on its preparation. The algorithm for this preparation is described in detail in the next section of the book and includes:

- in-depth theoretical study of material on which work is performed;
- preparation of the necessary educational and material base and documentation;
- preparation of teachers, staff and students to work [3, p.21].

At the same time, A.D. Bondar recommends that any work can be conditionally divided into a number of stages: preliminary preparation, start of work (admission), its execution, preparation of a report and evaluation of work (credit) [3, p.22].

In preparing for the laboratory work, the student must first and foremost understand its purpose. The degree of interest of the student in the performance of a particular job is directly proportional to the degree of his confidence, relevance to the work of his purpose. If a student perceives laboratory work as a must-do in the course, there will be one thing. But if a student feels that he/she is really learning in the laboratory, if the work is creative, the attitude will be quite different [3, p.22].

An important factor in the success of the laboratory (practical) work is to prepare the necessary documentation: instructions, teaching materials, and so on. A very important factor that determines the success of one or another laboratory (practical) work is abundance of the necessary devices, machines, tools and supplies.

Each laboratory or practical work should be prepared by a teacher. Its preparation according to A.D.Bondar includes:

- Reviewing of the programs, textbooks, manuals, instruction and teaching materials on the topic of laboratory (practical) work for the purpose of rational organization and its conduct by students. This allows the teacher to view most of the content, to introduce new elements (and improve the presentation of material) to clarify the content of the report and check questions.
- Check readiness of devices, installations and materials needed for laboratory(practical)work.
- Each laboratory work should be promptly provided with training and material resources – proper devices and machinery, equipment and materials [1, p.29].

In preparation for laboratory work, according to A.D. Bondar, one should anticipate and plan consultations (group and individual) on helping students in preparing for these works. The success of the consultation before the laboratory or practical work largely depends on the preparation of students for these works. Each student should prepare for the laboratory works to actively and independently conduct experiments, and the task of the department is to help them in this. In consultation, another teacher explains students core theoretical propositions, which were too complex, checks the instructions to be performed, tells what to pay special attention to, how many times to conduct a particular experiment, instructs how to build schemes, discusses the accuracy of future measurements. At the same time, according to A.D. Bondar, consultation should not be a substitute for independent work of students, but only stimulate a conscious and active conduction of the experimental tasks [3, p.33].

Equally important, according to the author, is the study of safety rules when working in laboratories. According to A.D. Bondar it should provide [3, p.34]:

- appropriate placement of furniture and equipment in the laboratory;
- concealed wiring of electric current, gas and, where necessary, water;
- installation of fuses, switches and outlets to turn off electrical appliances;
- build walls to prevent moving of the machinery parts and mechanisms of electrical systems and wiring with no safe voltage, high temperature zones, etc.;
- create the necessary lighting and ventilation, especially in chemical laboratories;
- provide students with special clothing, rubber gloves for electrical work his shock and harmful chemicals, special goggles, etc.;
- installation of alarm systems (where appropriate), which involved the supply of light and sound signals "working well" and "working faulty" in various settings.

Compliance with these requirements will facilitate security provision of laboratory and practical work, prevent injuries and other accidents, the correct operation of devices and systems. [3, p.34]. At the same time, polls of modern students on compliance with certain requirements are far from always being performed: "There is a constant lack of personal protective equipment. Although, according to safety requirements, lab workers should be provided with a robe, goggles and gloves. Students are required to buy robes on their own. Gloves are neglected and glasses are often missing. Gas masks in the lab are often from the 1970s and older. "

A key section of the book is a section on the organization and methodology of laboratory and practical work. According A.D. Bondar, a successful laboratory work the staff of the science departments must first seek modernization of laboratory equipment.

The main disadvantages to conduct laboratory and practical work both in times of A.D. Bondar, and current conditions are:

- insufficient provision of their educational and material base, lack of necessary equipment, machines, devices and materials;
- low level of preparation of students for them; standardization of organizational forms and methods of laboratory and practical works on various subject matters;
- absence of elements of new scientific research, creative experiment in carrying out separate works;
- the mismatch of the course of lectures and laboratory work in time, which reduces their quality, etc. [1, p.38].

The success of the laboratory and practical work in scientific department will depend not only on the equipment, but also on their organization and methods of conduction. The latter are crucial factors in ensuring quality of training specialists with higher education.

The organizational plan raises the question of who will lead the laboratory and practical work. At the end of each academic year department decides on hour distribution

between teachers in the next school year. According to A.D. Bondar it is desirable to carry out this distribution so that in one way or another group of students and practical laboratory work is directed by the teacher who conducts lectures. This will ensure adequate continuity between lectures and laboratory work and gives the possibility to combine lectures and laboratory work on the course in single process that will ensure effective implementation of the principle of a combination of theory and practice. If there is no such opportunity, then the lecturer must be assigned with at least one group. Carrying out these works in one group should be a standard for preparing and conducting them in other groups by his colleagues. At the same time the lecturer has responsibility to guide the organization and methodology of laboratory and practical work on the course [3, p.41].

In the practice of science department there are several major methods of conducting laboratory and practical work – frontal-method, practical method and cycle method (by topics) [3, p.47]. One method or another is used by the departments depending on the availability of educational and material resources and the tasks that you have on this course in the system of training specialists of this profile. Frontal method is conducted when there are enough equipped laboratories, the required number of instruments, equipment and machinery for simultaneous work by all students of similar groups. This method of work simplifies link of theoretical knowledge with practical as well as preparation by the students and teachers. It is considered the most useful, but less is feasible because it needs large number of laboratory devices and large area. The advantages of the method of frontal laboratory(practical) classes according to A.D. Bondar included the following:

- the whole group is confronted with the same tasks that they must accomplish in the course of their work;
- students are prepared for easier implementation of such work through consultation, explaining some of its stages;
- it is possible to standardize control of students' readiness for laboratory or practical work and to carry it out in short time;
- during the performance if needed there is a possibility to give assistance to individual students and the entire group;
- standardize summarizing the work and assessment by the teachers [3, s.47-48].

The experience of conducting these types of classes, according to A.D. Bondar, indicate that, while studying particular subjects the preferred method of laboratory (practical) classes is frontal one. Of course, the use of frontal method of conducting laboratory and practical classes may be only at the presence of the required number of equipment, and also skillful organization of students, as well as presentation of the teacher. But the front method, with all the positive aspects of its implementation, has drawbacks. The main one is that it does not provide sufficient autonomy of students. With this method, some of the students are not very active, because there is a possibility of mechanical repeat of operations that were conducted by their companions. When used properly, this method is limited with opportunities for creative search in dealing with the tasks of laboratory (practical) work [3, p.48].

Method of laboratory and practical work in a workshop where students have different course tasks (or sections), in terms of development of independent thinking of students and increase interest to science, which is studied, is more effective. In this way, the student works with more responsibility, faster gets experimental skills than the work performed by frontal method. Because the laboratory and practical work in a workshop requires less equipment than the frontal one, and because of this simple implementation, it has become the most common in science departments. The main disadvantage of this method is a significant mismatch between the execution time for the practical notions and theoretical study of relevant provisions in the lectures. This deficiency causes for laboratory managers to develop their method of conducting classes that would have consistency in the time between the theoretical and practical training course. It is a question of laboratory and practical work cycles, where students perform different tasks belonging to the same topic [3, p.48].

The similar way to this method of organization of laboratory work is so-called "complex-collective method". The main idea is that all works are divided into cycles and performed simultaneously by all students [3, p.48]. Laboratory and practical work can be done by students individually or collectively wise, in two or three persons. In most cases, team of students (here again played a significant role of the availability of equipment in the laboratory). Pursuing another performance of the same work and students help each other, they are lighter and easier to monitor and take the readings of these works to control the acquired experimental skills. However, all these positive aspects of team performance students often are overridden by negative ones. And the main drawback in this kind of works – unequal participation of students in the performance of tasks. Even when the work is done by two students, one of them does it more actively and creatively, and the second – just watching or is passively involved. The task of the teacher is to monitor the active work of each student, and in some cases, this can be achieved by giving students a team of different individual tasks. As evidenced by the experience of A.D. Bondar most advisable to use a tailored performance of laboratory works at the frontal method [3, s.50-51].

Especially important both organizationally and methodologically according to A.D. Bondar, is conducting introductory sessions to the laboratory and practical work. In order to ensure quality of laboratory (practical) work of students, teachers organize test of their readiness. This test, according to A.D. Bondar, should be conducted this way:

a) interviews with each student, during which knowledge of theoretical material on the subject of its equipment and the implementation of the work is checked;

b) machine or machine-free standardized control on the same issues [3, p.54].

Each of these control methods has both positive and negative sides. Personal check of the student enables the teacher to clarify all issues of interest and give a student in need particular assistance in the preparation of the laboratory work, advise on specific issues. This checking method has drawbacks. The main one is that for such verification teacher has to spend a lot of time. When the group is 30 students, and to check the readiness of each one takes 10 minutes of time, will be about 5 hours. And this is only in one group and one laboratory work [3, p.54].

To improve the effectiveness of laboratory and practical work, according to A.D. Bondar, you must change the traditional method of conducting in such a way so that the experiment of the student foresees the formulation of goal and objectives, the choice of methods for solving tasks, the formulas should determine variables that are necessary to measure on the selection of devices, construction installation, mathematical check of results of experiments [3, p.61].

The issue of cognitive activity in the performance of laboratory and practical work and in bearing their effectiveness can be solved in different ways: the inclusion of these elements of research, additional credits of work in which students must demonstrate independence in solving

experimental tasks because they are the control of understanding, etc. [3, p.62].

In the inspection and evaluation of students' knowledge ratio between planned and actual state of training is stated, enabling a timely reaction for underachieving students to direct their work in unity with the set requirements. Assessment of students' knowledge, skills and competences are also a factor in learning. Teaching control requires students organizational and psychological mobilization of their forces, responsible for the organization of intellectual work, memory training, education of the will and character development skills qualified presenting their knowledge, including the language of the relevant science.

The final step in the laboratory should be the talk with the teacher about student's experiment. During the interview, the student should demonstrate a thorough understanding of theoretical material, understanding of measurement techniques, ability to use the devices and make the necessary calculations, the ability to present their thoughts and knowledge at a sufficiently high scientific level. During the conversation, the teacher finds "weak spots" in understanding the various issues of theoretical and experimental character and gives points to their students. It also shows difficulties encountered in preparing or carrying out the work as they should in the laboratory. At the end of talks on the basis of the report and the totality of data about the job the question of its assessment is viewed [3, p.66].

Systematic testing of students' readiness to laboratory and practical work and evaluation of these activities is an important measure of success of the students. The reason for failure, according to A.D. Bondar, can be organizational failures and methodologically incorrect statement of laboratory and practical work. These shortcomings can be manifested in talking to students, identifying the difficulties they met in the preparation and execution of works, inaccuracies and the soapy answers of the students. Improving student achievement in this case is to review methodological advice to the laboratory and practical works, viewing measurement techniques and so on. The reason of no progress can be individual quality presentation of the teacher (e.g. low requirements) and attitudes to this type of work from students (absenteeism without timely submission of the reports etc.) [3, p.67-68].

In order to identify the main problems in planning, organizing and conducting laboratory work in modern conditions at the chemical and mechanics and mathematics faculties of the National Taras Shevchenko University of Kyiv, students held survey of professors and engineers involved in the organization of laboratory work. The results of the survey showed:

- a significant portion of the equipment, which the students use is old and does not meet modern requirements. " It often has to be repaired, but there are no spare parts for it, no masters who can adjust this equipment, so engineers have to repair it independently from improvised means and often at their own expense. According to students involved in academic exchanges at universities in Europe, this equipment serves it only as museum pieces ".
- Financing does not allow the purchase of new equipment or, even, permanent repair of the worn-out old ones. " Of course, there are several new devices in the faculties, which, in turn, were once donated by its graduates, but only engineers or workers who carry out their scientific work are allowed to work with them. Students are only observers, recording the measurement results. Of course, the real and genuine interest of students in the performance of laboratory work should be noted, and it is a fact that the technical and material condition of the equipment on which students have to perform the task is very poor. In some cases, when the task of laboratory work involves technically difficult and dangerous conditions, such activity is generally terminated or not conducted, and formally score is based on the theoretical study material".
- Insufficient number of reagents and permissions for their use. "Most of the reagents the students have been working on have been preserved since the Soviet Union. Much of them are no longer of the same quality, as some of the reagents can draw water from the air and some decompose. Sometimes, in order to conduct an experiment, the teacher has to buy a particular reagent. Laboratory work is also complicated by the prohibition on working with certain precursors that are necessary when performing laboratory work. Because of this problem, many experiments are conducted only by teachers for all students. Or else the theory is not fixed by the most common practice. This in turn has several consequences:
  - students do not have sufficient professional skills;
  - students do not know how to handle dangerous substances;
  - students do not have the opportunity to work independently on tasks."
- Outdated methods of laboratory work." Some techniques are outdated and not rational. There are times when a written assignment does not correlate with the requirements of the teacher, which adds complexity to students. Students are not interested in working with outdated techniques that are no longer used in the modern world (in business), they are not always relevant to modern requirements of the topic and tasks of laboratory work. It is often the case that lab tasks were completed 15-20 years ago and, in fact, no longer have any practical value, becoming only a formalized way of assessing students. Very often, even with a strong theoretical basis, students are forced to perform work that did not reveal the full potential of the acquired theoretical knowledge. Instead of developing truly necessary, relevant and, in their own way, unique methods of collecting, analyzing, and visualizing experimental data, students perform work that tests the ability to mechanically reproduce the material taught in the classroom, or has nothing to do with to the world of science, not even to real problems".
- Lack of motivation and interest of students in learning. In interviewing the teachers, it was found that in addition to the above problems, they also add to the problem – late submission of colloquiums and a large part of the laboratory pass. And as you know, without passing a colloquium, a teacher cannot allow a student to perform laboratory work. The problem lies much deeper than one might think – students see "... that the lab work they do (outdated with the wrong results) is all just" fad "and they are not interested in working with such devices and do not understand why they should do such lab work if it can't teach them anything. "

According to the students, "… the main problem of organizing and carrying out laboratory work in the modern science departments is the impressive passivity of the participants in the educational process. Often, unfortunately, it seems that even teaching staff are less interested in a fruitful educational process than students who are, of course, not homogeneous in their diligence and academic achievement. On the other hand, even after receiving detailed instructional instructions from the teacher and spending time on their study, students cannot formulate the purpose of laboratory work, to reproduce at least an approximate order of its implementation. Moreover, the reason for this problem is not the low level of theoretical and professional training of students. In certain circumstances, such as at work or when carrying out a project for which a student receives real money, he or she is able to quickly and

productively mobilize all the resources and abilities necessary for successful work. In an educational setting, the student expects that the teacher should tell what and how to do it. "

Obviously, remedies depend largely on the causes. To address these and many other material, pedagogical, psychological, methodological and other issues, it is advisable to seek the advice that has been formulated on the basis of the analysis and generalization of good pedagogical experience over several decades by Professor A.D. Bondar. And although they were produced more than 50 years ago, in completely different socio-economic contexts, they are in many ways in line with the proposals from participating students and teachers:

- "The main criterion for the quality of higher education should be the ability of the young generation to live fully and actively in the new world, to constantly improve themselves, to adequately respond to changes, especially in times of technological and civilizational breakthroughs. In addition, the progressive changes in public relations necessitate the provision of a high level of higher education as a guarantee of competitiveness, professional and social mobility, and self-improvement of citizens."
- "To cooperate with enterprises to attract students to practice. Conducting laboratory work in a professional environment (at production facilities). The university needs to find common ground with businesses so that students have the opportunity to do laboratory work there, and entrepreneurs can put forward their requirements for training future professionals, who will then mostly work there. This will allow individual students to perform well in practice and to hire skilled workers in the future."
- "From changing the format of laboratory work from individual to group. Drawing on the experience of European, in particular Scandinavian, universities, where laboratory work is usually carried out in small groups of 2-3 people. Such a system stimulates personal responsibility and interest, because an additional factor is the desire to work well for the sake of the team, not to let down their colleagues."

Conclusions. Laboratory classes are an effective way of learning the material, giving students the opportunity to put their knowledge into practice and see the results of their work in person. Visual assessment of the course of work of students allows them to safely learn and remember the material.

At the same time, many factors significantly reduce the effectiveness of this important type of training. Improving the quality of laboratory work can be helped, in particular, by the implementation of the guidelines developed by Prof. A.D. Bondar almost half a century ago.

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РОЗРОБКА А.Д.БОНДАРЕМ ТЕОРІЇ ТА ПРАКТИКИ ПРОВЕДЕННЯ ЛАБОРАТОРНИХ ЗАНЯТЬ У ВИЩІЙ ШКОЛІ ТА СУЧАСНІСТЬ

Проаналізовано внесок професора кафедри педагогіки КДУ А.Д.Бондаря у розробку теоретичних засад та методики проведення лабораторних та практичних занять у вищій школі, визначено можливість використання цього педагогічного досвіду у сучасних умовах. Встановлено, на сьогоднішній день праці та педагогічна діяльність А.Д. Бондара недостатньо вивчені, хоча у його роботах відображено результати дослідження важливих дидактичних проблем, які є актуальними і на сьогоднішній день. Проаналізовано, що серед різноманітних видів навчальних занять у вищій школі важливе місце належить лабораторним і практичним роботам, тому що через них здійснюється дотримання одного з провідних принципів дидактики – принципу зв'язку теорії з практикою. Лабораторні і практичні роботи, на переконання А.Д.Бондаря, тісно пов'язані з лекціями і самостійною роботою студентів, вони, при належній їх організації, допомагають студентам творчо використати на практиці ті теоретичні знання, які вони здобули на лекціях і в процесі вивчення літературних джерел. Цей вид навчальних занять активізує пізнавальну діяльність студентів, дає їм можливість виявити ініціативу і винахідливість, міцніше засвоїти програмний матеріал, ознайомитись з найновішими установками і приладами, обладнанням і матеріалами, з постановкою експерименту в лабораторних чи виробничих умовах, допомагає викладачам залучати студентів до дослідницької роботи, сприяє розвитку у них мислення, винахідливості, раціоналізаторства. За переконаннями А.Д.Бондаря, лабораторні заняття є ефективним способом вивчення матеріалу, дають можливість студентам застосувати свої знання на практиці й наживо бачити результати своєї роботи. Візуальна оцінка ходу роботи студентами дозволяє надійно засвоїти і запам'ятати матеріал.

У той же час багато чинників суттєво знижують ефективність проведення цього важливого виду навчальних занять. Доведено, що підвищенню якості проведення лабораторних занять можуть допомогти, зокрема, реалізація настанов, розроблених проф. А.Д. Бондарем майже піввіку тому назад.

Ключові слова: лабораторне, практичне заняття, форми організації навчання, види навчальних занять, А.Д. Бондар.